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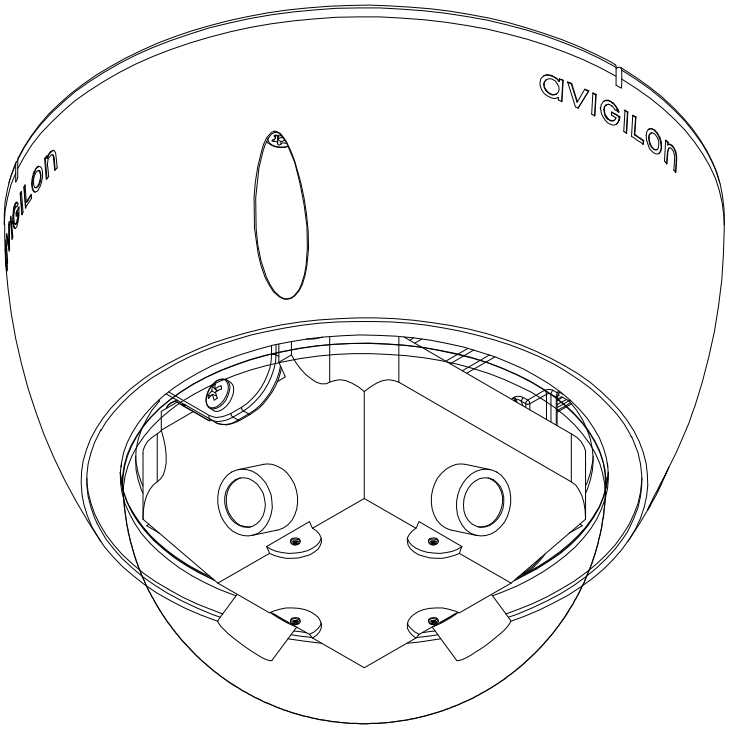

Installation Guide

Avigilon Panoramic High Definition IP Dome Camera Model:

8.0MP-HD-DOME-360

920-0015A-Rev3

Important Safety Information

This manual provides installation and operation information and precautions for the use of this dome camera. Incorrect installation could cause an unexpected fault. Before installing this equipment read this manual carefully. Please provide this manual to the owner of the equipment for future use.

The Warning symbol indicates the presence of dangerous voltage within and outside the product enclosure that may constitute a risk of electric shock, serious injury or death to persons if proper precautions are not followed.

The Caution symbol alerts the user to the presence of hazards that may cause minor or moderate injury to persons, damage to property or damage to the product itself if proper precautions are not followed.

Warning — Failure to observe the following instructions may result in severe injury or death.

- Do not use near water or expose to dripping or splashing. Do not place objects filled with liquids above the device.
- Do not expose to rain or moisture.
- For indoor use only.
  If used outdoors, an approved outdoor mounting adapter or enclosure is required. Consult with Avigilon for more information.
- Installation must be performed by qualified personnel only, and must conform to all local codes.
- This product is intended to be supplied by a UL Listed Power Unit marked “Class 2” or “LPS” or “Limited Power Source” with output rated 12 VDC or 24 VAC, 9 W min. or Power over Ethernet (PoE), rated 48 VDC, 9 W min.

- Any external power supply connected to this product may only be connected to another Avigilon product of the same model series. External power connections must be properly insulated.
- Do not connect directly to mains power for any reason.

Caution — Failure to observe the following instructions may result in injury or damage to the dome camera.

- Do not install near any heat sources such as radiators, heat registers, stoves, or other sources of heat.
- Do not subject the cables to excessive stress, heavy loads or pinching.
- Do not open or disassemble the device. There are no user serviceable parts.
- Refer all servicing to qualified personnel.
  Servicing may be required when the device has been damaged (such as from a liquid spill or fallen objects), has been exposed to rain or moisture, does not operate normally, or has been dropped.
- Do not use strong or abrasive detergents when cleaning the device body.
- Use only accessories recommended by Avigilon.
- Avoid leaving the image sensor exposed for extended periods of time. Always cover the image sensor with either a lens or a dust cap.
- Do not allow dust, moisture or any other foreign debris to enter the lens mount.
- Never touch any glass elements inside the lens mount.
- Do not point the lens directly at the sun or other extremely bright objects or damage to the image sensor may occur.
- Use of controls or adjustments or performance of procedures other than those specified in this document may result in hazardous radiation exposure.

Regulator Notices

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This product complies with IEC 60825-1 (A2:2001) - CLASS 1 LED PRODUCT. Maximum radiated output power: 740 mW.

This Class A digital apparatus complies with Canadian ICES-003.

FCC Notice

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Changes or modifications made to this equipment not expressly approved by Avigilon Corporation or parties authorized by Avigilon Corporation could void the user's authority to operate this equipment.

Disposal and Recycling Information

When this product has reached the end of its useful life, please dispose of it according to your local environmental laws and guidelines.

European Union:

This symbol means that according to local laws and regulations your product should be disposed of separately from household waste. When this product reaches its end of life, take it to a collection point designated by local authorities. Some collection points accept products for free. The separate collection and recycling of your product at the time of disposal will help conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment.

Other Notices

Compilation and Publication Notice

This manual has been compiled and published covering the latest product descriptions and specifications. The contents of this manual and the specifications of this product are subject to change without notice. Avigilon reserves the right to make changes without notice in the specifications and materials contained herein and shall not be responsible for any damages (including consequential) caused by reliance on the materials presented, including but not limited to typographical and other errors relating to the publication.

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English

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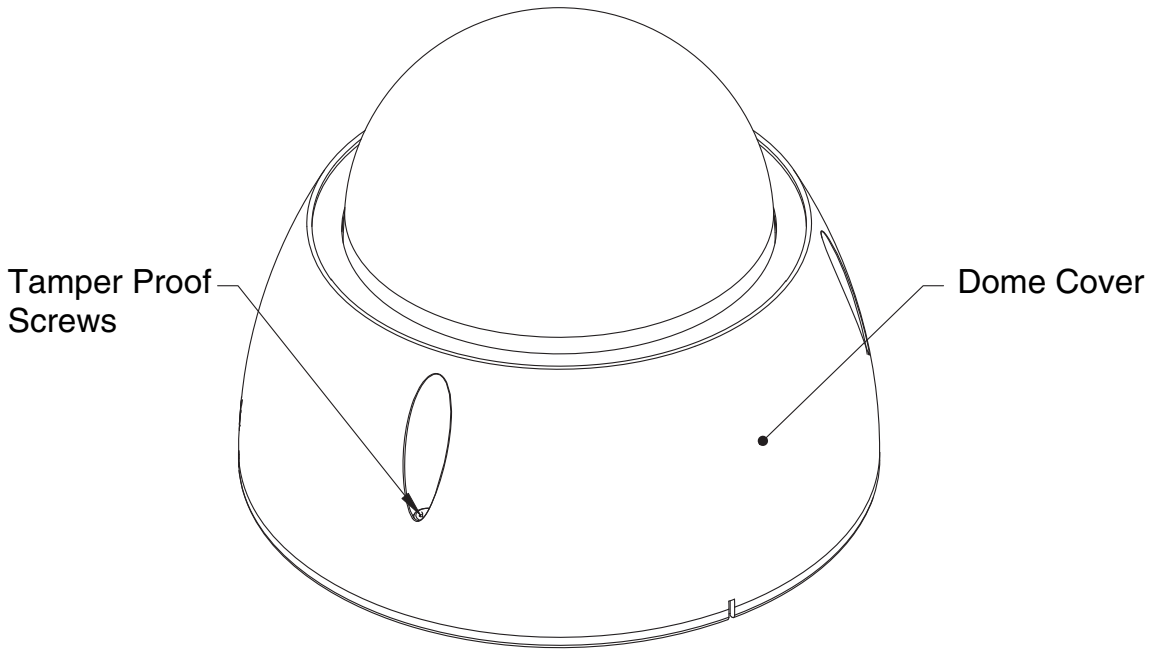
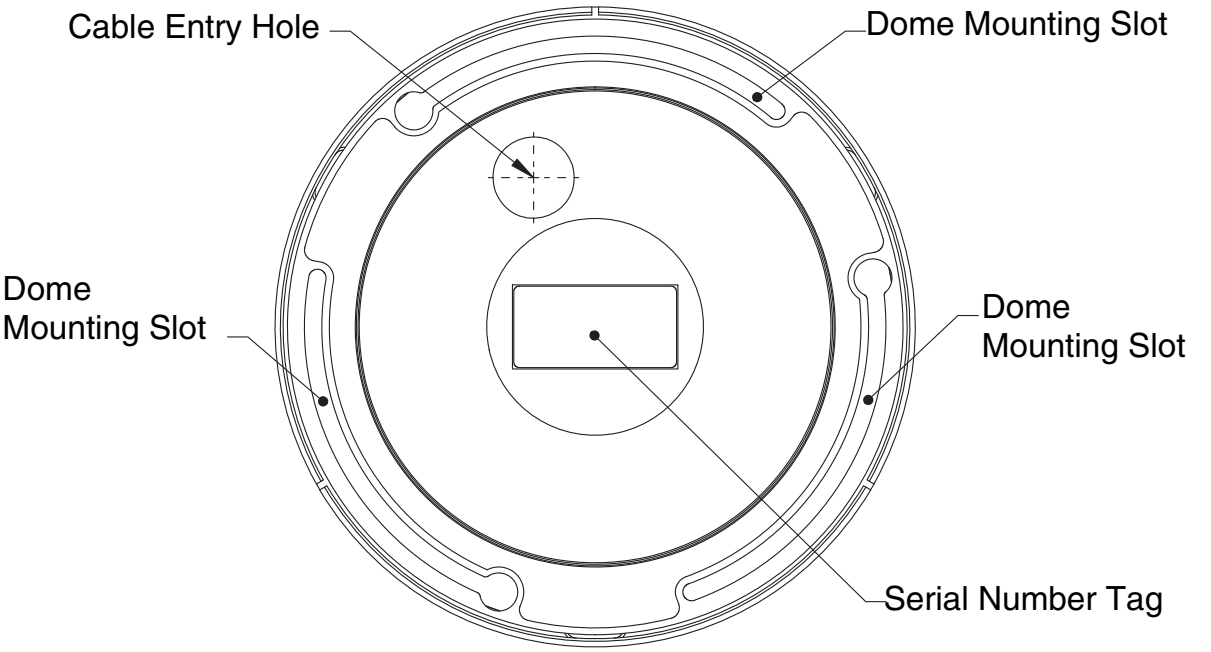
Overview

Cover View



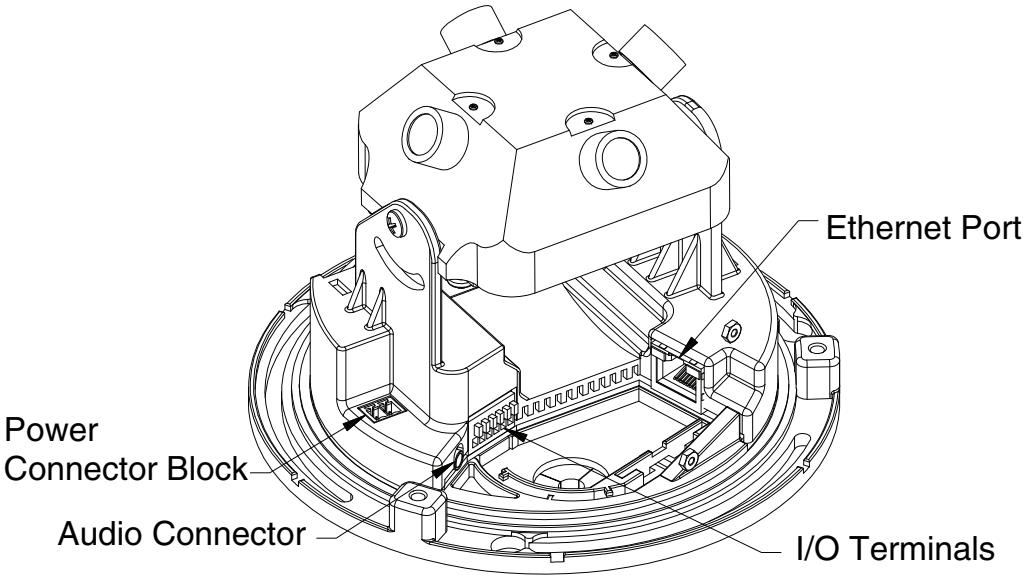
Feature	Description
Dome Cover	Vandal proof dome cover constructed out of aluminum with a polycarbonate bubble.
Tamper Proof Screws	TORX tamper-resistant captive screws to fix the dome cover to the base.

Bottom View



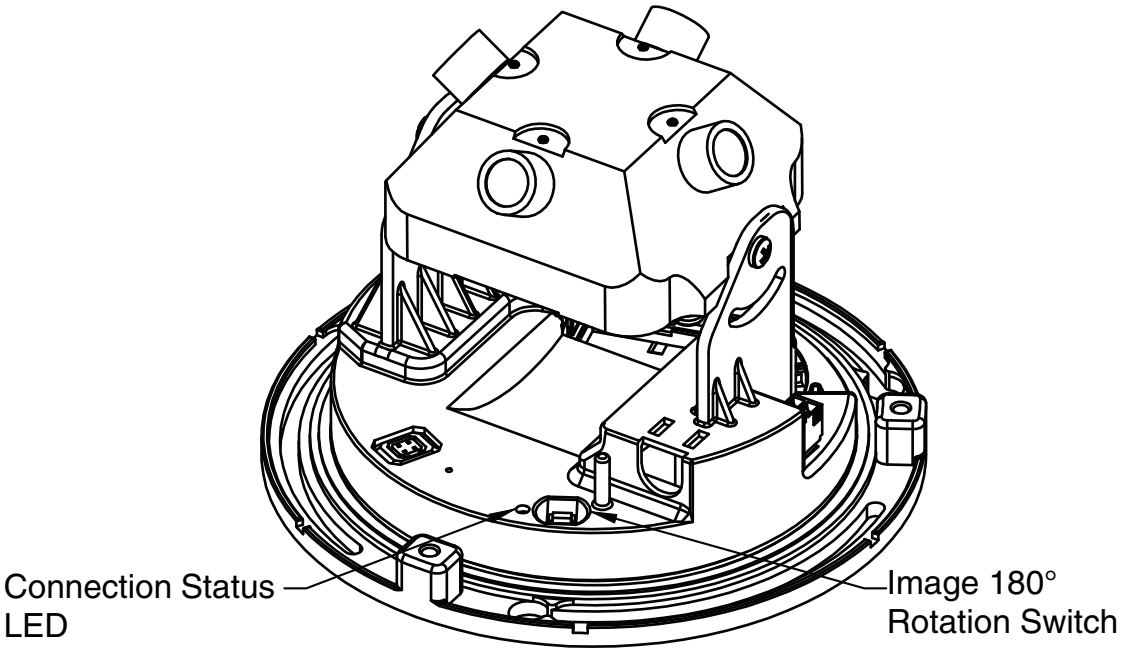
Feature	Description
Cable Entry Hole	An entry hole for network, power and I/O cables.
Dome Mounting Slot	Mounting points for the dome camera.
Serial Number Tag	Product serial number and part number label.

Front View



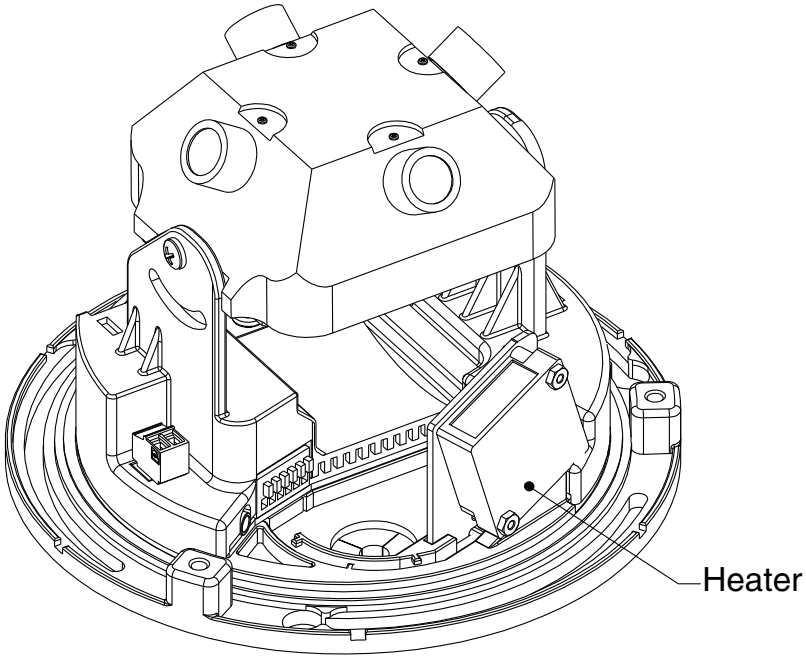
Feature	Description
Ethernet Port	Accepts an Ethernet connection to a network. Server communication and image data transmission occurs over this connection. Also receives power when it is connected to a network that provides Power over Ethernet. The Ethernet Port has two status lights indicating link (left) and activity (right).
Power Connector Block	Accepts a terminal block with either AC or DC power connection. DC input can be either polarity. Only required when Power over Ethernet is not available.
Audio Connector	Accepts a 3.5 mm input from an external microphone (microphone is not included). See the section about connecting microphones for more information.
I/O Terminals	Provides connections to external input/output devices. See the section about connecting external devices for more information.

Rear View



Feature	Description
Connection Status LED	Provides information about the network connection. See the section about connecting to the network video recorder for more information. The Connection Status LED can be turned off for operating in covert installations. See the *Avigilon Control Center Client User Guide* for more information.
Image Rotation Switch	Rotates the image by a 180˚ angle.

Heater View



Feature	Description
Heater	Provides heat for the camera to extend the operating temperature range. The heater is not included with all models.

Installation

Required Tools and Materials

- Small slotted screwdriver with 5/64” or 2 mm blade width — for connecting power when not using Power over Ethernet.

Package Contents

Ensure the package contains the following:

- Avigilon Panoramic High Definition IP Dome Camera
- Terminal block
- T20 TORX tamper resistant key
- 3 screws and anchors for solid walls
- Drill template

Installation Steps

Complete the following procedures to install the dome camera.

1. *Removing the Dome Cover* on page 6.
2. *Mounting the Dome Camera* on page 7.
3. *Connecting Power* on page 8.
4. *Aiming the Dome Camera* on page 9
5. *Connecting to the Network Video Recorder* on page 9

Removing the Dome Cover

Remove the dome cover by loosening the 3 tamper-proof screws that fix the cover to the base. The tamper resistant key included with the dome camera can be used to loosen the screws.

NOTE: Be careful not to scratch the dome bubble.

Mounting the Dome Camera

The dome camera can be mounted to a surface on its own or using one of the four dome camera mounting accessories: indoor electrical box mounting plate, indoor in-ceiling mount, indoor/outdoor mounting base, and indoor/outdoor pendant mount.

To mount the dome camera, complete the following steps:

1. Using the drill template, drill three mounting holes and one cable entry hole in the ceiling/ wall. If using a dome camera mounting accessory, this step is not necessary.
2. Drive three screws into mounting holes and leave 6 mm (¼") between the screw head and the ceiling/wall surface.
3. Pull the cables through the cable entry hole in the ceiling/ wall and the cable entry hole in the dome camera.
4. Place the dome base on the screws using the keyed mounting slots and rotate it clockwise.
5. Tighten the screws to hold the dome camera in place.

Warning — Only use UL listed mounting brackets suitable for the mounting surface and can sustain a minimum 0.53 kg (1.2 lbs), plus the weight of the attached lens.

Caution — This camera is designed for indoor use only.

For outdoor use, an outdoor mounting accessory is required.

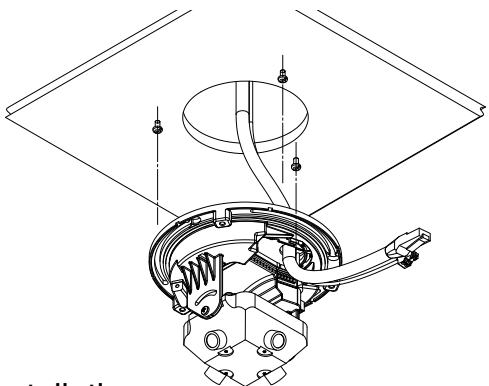


Figure: Dome camera installation.

Connecting Power

NOTE: Do not perform this procedure if Power over Ethernet (POE) is used.

If PoE is not available, the dome camera needs to be powered through the removable power connector block. Refer to the diagrams in this guide for the location of the power connector block.

The device can be powered from 12 VDC or 24 VAC. The power consumption information is listed in the product specifications.

To connect power to the power connector block, complete the following steps:

1. Remove the power connector block from the device.
2. Remove the insulation from ¼" (6 mm) of the power wires. Do not nick or damage the wires.
3. Insert the two power wires into the two terminals on the power connector block. The connection can be made with either polarity.
   Use a small slotted (5/64" or 2 mm blade width) screwdriver to loosen and tighten the terminals.
4. Attach the power connector block back into the receptacle on the device.

Warning — This product is intended to be supplied by a UL Listed Power Unit marked "Class 2" or "LPS" or "Limited Power Source" with output rated 12 VDC or 24 VAC, 9 W min. or PoE rated 48 VDC, 9 W min.

When you select the wire used to provide power, be sure to select a gauge that is heavy enough for the wiring distance. Refer to the following table for the maximum wire length for different wire gauges.

Table:Wire Length for Different Wire Gauges

Wire Gauge		Maximum Run Length (ft [m])	
AWG	**mm²**	**24 VAC**	**12 VDC**
24	0.2	164[50]	43[13]
22	0.33	267[81]	71[21]
20	0.5	428[130]	114[34]
18	0.82	680[207]	181[55]
16	1.3	1071[326]	285[87]

Aiming the Dome Camera

1. Loosen the mounting screws.
2. Turn the lenses to the desired direction by rotating the base.
3. Once satisfied, secure the dome camera's position by tightening the mounting screws.
4. If the image is upside down, flip the image rotation switch to rotate the image by a 180˚ angle.

Connecting to the Network Video Recorder

Important: To avoid networking problems, only use network switches recommended by Avigilon.

Connect the dome camera to the same network as the server running the Avigilon Control Center software. An IP address is automatically assigned to the device, and will be detected by the software. For more information on how to configure the connection, see the software user guide.

The connection status LEDs show the progress in connecting to the server and are described in the following table. By default, the connection status LED shuts off after the dome camera has been connected to a server

Table:Connection Status LED States

Connection State	Connection Status LED	Description
No Link	Off	Not physically connected to any network device
Obtaining IP Address	One short flash every second	Attempting to obtain an IP address
Connecting to a server	Two short flashes every second	An IP address has been obtained and is attempting to connect to the server
Upgrading Firmware	Two short flashes and one long flash every second	Updating the firmware
Connected	On	Connected to the server

IP Address Selection

Once connected to a network, the dome camera will attempt to locate and obtain an IP address from a DHCP server. If this fails, an IP address will be selected using Zeroconf (APIPA).

If the IP address is set using Zeroconf, the IP address will be in the 169.254.* subnet. A static IP address can be set from the Avigilon Control Center software, consult the software user guide for details.

Advanced Features

Upgrading the Firmware

The firmware can be field-upgraded through the Avigilon Control Center software. Consult the software user guide for details on how firmware upgrades are performed.

It is possible for the firmware to become corrupted during an upgrade — for example, if power is lost during the upgrade process. If this occurs, the dome camera can be reverted to run from bootstrap firmware. Once reverted, it can be upgraded as usual.

Warning — Only revert to bootstrap firmware if the device is unable to start up due to corrupted firmware.

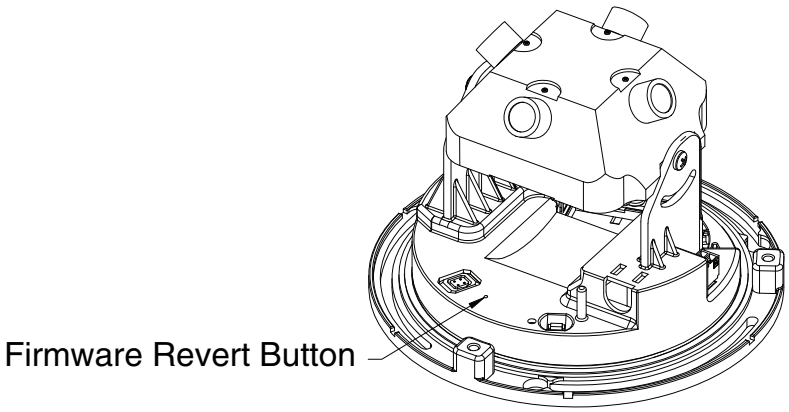


Figure: The firmware revert microswitch at the rear of the camera.

1. Disconnect power from the camera.
2. Using a straightened paperclip or similar tool, gently press and hold the firmware revert microswitch.
3. While continuing to hold the microswitch, power the device. Release the microswitch after three seconds.

Caution — Do not apply excessive force. Inserting the tool too far will damage the device.

Connecting to External Devices

External devices are connected through the I/O terminal. The pinout for the I/O terminal is shown in the following table and diagram. Consult the software user guide for details on how to configure the external devices.

Table:External I/O Terminals

Pin	Function	Description
1	GND	Ground for RS-485 interface.
2	RS-485 RX/TX+	Half-duplex RS-485 interface for controlling external equipment
3	RS-485 RX/TX-	
4	Input (-)/Output A	Shared pin for Input and Output.
5	Input (+)	The input uses a photocoupler and is electrically isolated from the internal circuitry. The input voltage should not exceed 12 V.
6	Output B	The output uses a photocoupler and is electrically isolated from the internal circuitry. The output terminal (A and B) connections can be made with either polarity. The output can drive a maximum load of 50 V and 120 mA.

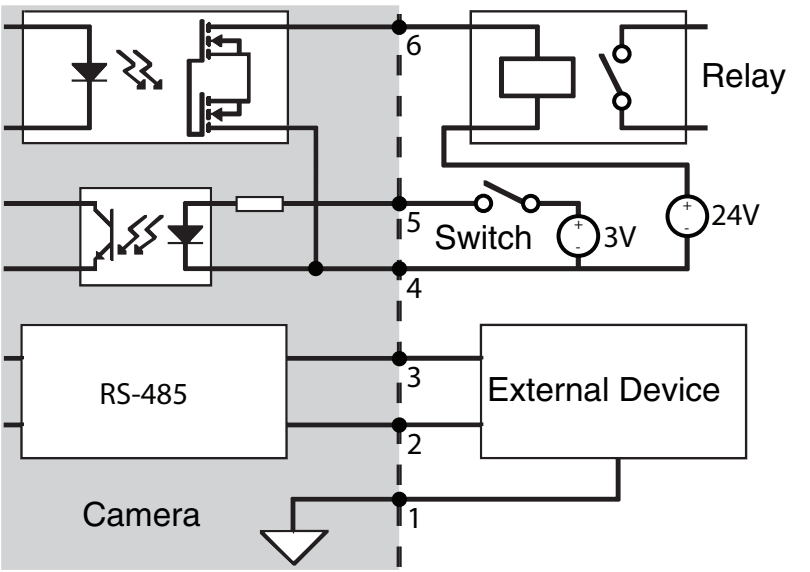


Figure: External I/O terminal schematics and example application.

Connecting to Microphones and Speakers

The dome camera can be connected to an external microphone and speaker through the audio connector. The audio connector is a 3.5 mm (1/8”) input for a mono microphone or a line-in mono signal. The left channel of the stereo signal is used. The connector pinout is shown in the following diagram.

Consult the software user guide for details on how configure the audio input and output.

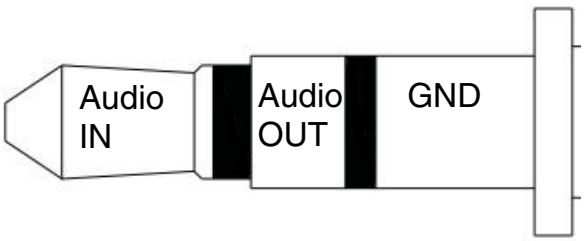


Figure: Audio connector.

Installing Replacement Dome Bubble

The dome bubble can be replaced if it is damaged.

1. Remove the dome cover by loosening the 3 tamper-proof screws.
2. Remove the 4 screws and retaining ring that fasten the bubble to the dome cover.
3. Pull the bubble out of the aluminum cover and remove the O-ring.
4. Put the O-ring on the replacement bubble and insert it into the dome cover.
5. Screw the retaining ring into the dome cover.

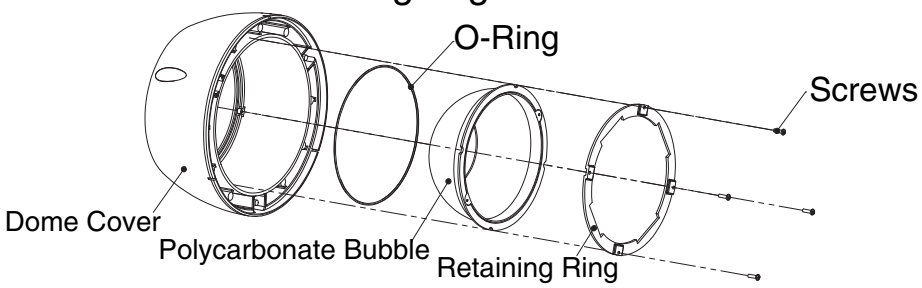


Figure: Dome bubble assembly

Cleaning

Body

Use a dry or lightly dampened cloth to clean the camera body.

Caution — Do not use strong or abrasive detergents when cleaning the camera body.

Specifications

Network		
Network	100Base-TX	
Cabling Type	CAT5	
Connector	RJ-45	
Security	SSL	
Protocol	UDP, TCP, SOAP, DHCP, Zeroconf	
Mechanical		
Dimensions ØxH	150mm x 120mm 5.9” x 4.7”	
Weight	0.91kg (2.0lbs) without lens	
Dome Bubble	Polycarbonate, clear	
Body	Aluminum	
Housing	Surface mount, vandal resistant	
Finish	Powder coat, cool gray 2	
Adjustment Range	360° pan, 180° tilt, 180° azimuth	
Electrical		
Power Source	VDC: 12-24 V VAC: 24 V PoE: IEEE802.3af Class 3 compliant	
Power Consumption	9 W +5 W with heater option	
Power Connector	2-pin terminal block	
Environmental		
Operating Temperature	-10 °C to +50 °C (14 °F to 122 °F) -30 °C to +50 °C (-22 °F to 122 °F) (with heater option)	
Storage Temperature	-10 °C to +70 °C (14 °F to 158 °F)	
Humidity	20 - 80% Relative humidity (non-condensing)	
Certifications		
	UL 60950 EN 60950-1 ROHS	CSA60950 CE WEEE
Environmental	IK10 Impact Rating	Meets IP66 Weather Rating
Electromagnetic Emissions	FCC Part 15 Subpart B Class A IC ICES-003 Class A EN 61000-6-3 EN 61000-3-3	 EN 55022 Class A EN 61000-3-2
Electromagnetic Immunity	EN 50130-4 EN 61000-4-2 EN 61000-4-3 EN 61000-4-4	 EN 61000-4-5 EN 61000-4-6 EN 61000-4-11

Limited Warranty & Technical Support

Avigilon warrants to the original consumer purchaser, that this product will be free of defects in material and workmanship for a period of 3 years from date of purchase. The manufacturer's liability hereunder is limited to replacement of the product, repair of the product or replacement of the product with repaired product at the discretion of the manufacturer. This warranty is void if the product has been damaged by accident, unreasonable use, neglect, tampering or other causes not arising from defects in material or workmanship. This warranty extends to the original consumer purchaser of the product only.

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